

Ephemeris for Physical Observations

Greenwich Noon.	Angle of Position of γ 's Axis.	Latitude of Earth above γ 's Equator.	Latitude of Sun	A-L.	O-L.	Longitude of γ 's Central Meridian.	Cor. for Phase.
1883.							
Sept. 16	13°340	° + 111.1	° + 1.346	° - 9.066	° 16°876	° 184°70	° + 0.36
21	13°662	° 1.079	° 1.326	° 9.482	° 16°048	° 216°29	° .39
26	13°963	° 1.044	° 1.306	° 9.853	° 15°265	° 247°95	° .42
Oct. 1	14°243	° 1.010	° 1.285	° 10.176	° 14°531	° 279°67	° .45
6	14°501	° + 0.977	° + 1.265	° - 10.448	° 13°849	° 311°45	° + 0.47
11	14°736	° .945	° 1.245	° 10.664	° 13°223	° 343°30	° .49
16	14°947	° .915	° 1.225	° 10.821	° 12°655	° 15°21	° .51
21	15°133	° .886	° 1.205	° 10.915	° 12°150	° 47°19	° .52
26	15°294	° .858	° 1.185	° 10.943	° 11°713	° 79°24	° .52
31	15°428	° .832	° 1.164	° 10.900	° 11°347	° 111°36	° .52
Nov. 5	15°535	° + 0.808	° + 1.144	° - 10.783	° 11°054	° 143°56	° + 0.51
10	15°614	° .786	° 1.124	° 10.590	° 10°838	° 175°83	° .49
15	15°664	° .767	° 1.103	° 10.317	° 10°702	° 208°17	° .46
20	15°685	° .750	° 1.083	° 9.963	° 10°647	° 240°58	° .43
25	15°677	° .735	° 1.063	° 9.527	° 10°675	° 273°05	° .39
30	15°639	° .722	° 1.042	° 9.008	° 10°786	° 305°59	° .35
Dec. 5	15°571	° + 0.712	° + 1.021	° - 8.408	° 10°979	° 338°20	° + 0.31
10	15°475	° .705	° 1.001	° 7.728	° 11°251	° 10°87	° .26
15	15°351	° .700	° 0.980	° 6.973	° 11°599	° 43°58	° .21
20	15°200	° .698	° 0.959	° 6.146	° 12°019	° 76°33	° .16
25	15°023	° .698	° 0.939	° 5.254	° 12°505	° 109°12	° .12
30	14°824	° .700	° 0.918	° 4.304	° 13°049	° 141°93	° .08
1884.							
Jan. 4	14°605	° + 0.704	° + 0.897	° - 3.307	° 13°640	° 174°76	° + 0.05
9	14°370	° .710	° .876	° 2.273	° 14°268	° 207°59	° .02
14	14°124	° .718	° .856	° 1.214	° 14°922	° 240°40	° .01
19	13°870	° .727	° .835	° - 0.140	° 15°591	° 273°19	° .00
24	13°612	° .736	° .814	° + 0.935	° 16°262	° 305°94	° .00
29	13°356	° .747	° .793	° 1.993	° 16°921	° 338°64	° -.02

June 1883.

Observations of Jupiter.

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of Jupiter, 1883-84. By A. Marth.

Greenwich Noon.	Diameter		Difference of limbs		Defect of illumination.		d	w
	Equat.	Polar.	in A. R.	in Decl.	Equat.	in A. R. preced. limb.		
1883.								
Sept. 16	34.14	31.97	2°42'5	32°09'	0.21	0.10.0	9°07	268°34
21	34.53	32.33	2°45'0	32°46'	.24	0.10.	9°49	268°30
26	34.95	32.72	2°47'7	32°85'	.26	0.10.	9°86	268°27
Oct. 1	35.39	33.14	2°50'6	33°28'	.28	0.10.	10°18	268°24
6	35.86	33.58	2°53'6	33°72'	0.30	0.020	10°45	268°21
11	36.36	34.04	2°56'8	34°19'	.31	0.021	10°66	268°18
16	36.88	34.53	2°60'3	34°69'	.33	0.022	10°82	268°14
21	37.42	35.04	2°64'0	35°20'	.34	0.023	10°92	268°11
26	37.98	35.56	2°67'8	35°74'	.35	0.023	10°95	268°07
31	38.56	36.11	2°71'7	36°29'	.35	0.023	10°91	268°04
Nov. 5	39.16	36.67	2°75'8	36°85'	0.35	0.023	10°79	268°00
10	39.77	37.23	2°80'0	37°42'	.34	0.023	10°59	267°96
15	40.38	37.81	2°84'3	38°00'	.33	0.022	10°32	267°92
20	40.99	38.38	2°88'6	38°58'	.31	0.021	9°97	267°87
25	41.60	38.95	2°92'9	39°15'	.29	0.019	9°53	267°82
30	42.20	39.51	2°97'2	39°71'	.26	0.017	9°01	267°76
Dec. 5	42.78	40.05	3°01'4	40°25'	0.23	0.015	8°41	267°69
10	43.33	40.57	3°05'5	40°77'	.20	0.013	7°73	267°61
15	43.84	41.05	3°09'3	41°25'	.16	0.010	6°98	267°50
20	44.30	41.48	3°12'8	41°68'	.13	0.009	6°15	267°35
25	44.71	41.87	3°16'0	42°06'	.09	0.006	5°26	267°15
30	45.06	42.20	3°18'8	42°39'	.06	0.004	4°31	266°9
1884.								
Jan. 4	45.34	42.46	3°21'1	42°65'	0.04	0.003	3°31	266°4
9	45.55	42.65	3°22'9	42°83'	.02	0.001	2°28	265°2
14	45.68	42.76	3°24'1	42°94'	.01	0.000	1°22	263°1
19	45.71	42.80	3°24'8	42°97'	following limb		0°18	230°5
24	45.66	42.76	3°24'8	42°92'	.00	0.000	0°94	95°1
29	45.53	42.64	3°24'2	42°79'	.00	0.000	2°00	91°2

Greenwich Noon.	Angle of Position of Υ 's Axis.	Latitude of Earth Sun above Υ 's Equator.	$\Delta-L$	$O-L$	Longitude of Υ 's Central Meridian.	Cor. for Phase.
1884.						
Feb. 3	13°10'8	+ 0°758	+ 0°772	+ 3°037	17°55'6	11°27 - 0°04
8	12°87'2	.768	.751	4°04'1	18°15'6	43°83 .08
13	12°65'2	.778	.730	4°99'9	18°71'0	76°31 .11
18	12°45'2	.788	.709	5°90'2	19°20'8	108°70 .15
23	12°27'7	.797	.688	6°74'2	19°64'3	141°00 .20
28	12°12'9	.804	.667	7°51'2	20°01'1	173°20 .25
Mar.						
4	12°01'0	+ 0°810	+ 0°646	+ 8°208	20°30'6	205°29 - 0°29
9	11°92'2	.815	.625	8°82'5	20°52'1	237°29 .34
14	11°86'7	.818	.604	9°36'2	20°65'6	269°18 .38
19	11°84'5	.819	.583	9°81'8	20°71'1	300°98 .42
24	11°85'5	.819	.561	10°19'4	20°68'5	332°68 .45
29	11°89'8	.817	.540	10°49'0	20°58'0	4°29 .48
Apr.						
3	11°97'3	+ 0°812	+ 0°519	+ 10°707	20°39'7	35°81 - 0°50
8	12°07'8	.805	.498	10°84'9	20°13'7	67°25 .51
13	12°21'2	.797	.477	10°91'8	19°80'3	98°62 .52
18	12°37'4	.787	.455	10°91'8	19°40'4	129°92 .52
23	12°56'1	.774	.434	10°85'2	18°94'1	161°15 .51
28	12°77'2	.759	.413	10°72'3	18°41'2	192°32 .50
May						
3	13°00'6	+ 0°743	+ 0°392	+ 10°534	17°82'4	223°45 - 0°48
8	13°25'9	.725	.370	10°29'1	17°18'2	254°53 .46
13	13°53'0	.704	.349	9°99'6	16°48'8	285°56 .43
18	13°81'6	.682	.328	9°65'3	15°74'6	316°56 .40
23	14°11'7	.658	.307	9°26'5	14°96'0	347°52 .37
28	14°43'0	.632	.285	8°83'6	14°13'3	18°46 .34
June						
2	14°75'4	+ 0°605	+ 0°264	+ 8°369	13°26'8	49°38 - 0°31
7	15°08'7	.576	.243	7°86'8	12°36'8	80°28 .27
12	15°42'6	.545	.222	7°33'5	11°43'8	111°17 .23

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Greenwich Noon.	Diameter		Difference of limbs		Defect of illumination.		i	w
	Equat.	Polar.	in A.R.	in Decl.	Equat.	in A.R. following limb.		
1884.								
Feb. 3	45°32'	42°44'	3°23'1	42°59'	0°03	0°002	3°04	90°3
8	45°04'	42°17'	3°21'4	42°32'	.05	.004	4°04	89°8
13	44°68'	41°83'	3°19'1	41°98'	.08	.006	5°00	89°44
18	44°26'	41°44'	3°16'3	41°58'	.12	.008	5°90	89°22
23	43°79'	41°00'	3°13'2	41°13'	.15	.010	6°74	89°06
28	43°27'	40°51'	3°09'6	40°64'	.19	.013	7°51	88°93
Mar.								
4	42°71'	39°99'	3°05'8	40°11'	0°22	0°015	8°21	88°83
9	42°12'	39°44'	3°01'7	39°56'	.25	.017	8°3	88°75
14	41°52'	38°87'	2°974	38°99'	.28	.019	9°36	88°67
19	40°90'	38°29'	2°930	38°41'	.30	.021	9°82	88°59
24	40°27'	37°71'	2°885	37°82'	.32	.022	10°20	88°52
29	39°65'	37°12'	2°839	37°23'	.33	.023	10°49	88°46
Apr.								
3	39°03'	36°54'	2°794	36°65'	0°34	0°024	10°71	88°40
8	38°42'	35°97'	2°750	36°08'	.34	0°24	10°85	88°34
13	37°82'	35°42'	2°706	35°53'	.34	.024	10°92	88°28
18	37°25'	34°88'	2°663	34°99'	.34	.023	10°92	88°21
23	36°69'	34°35'	2°621	34°47'	.33	.023	10°86	88°15
28	36°15'	33°85'	2°581	33°97'	.32	.022	10°73	88°09
May								
3	35°64'	33°37'	2°542	33°49'	0°30	0°021	10°54	88°02
8	35°15'	32°91'	2°505	33°03'	.28	.020	10°30	87°95
13	34°69'	32°48'	2°469	32°60'	.26	.018	10°00	87°88
18	34°25'	32°07'	2°435	32°20'	.24	.017	9°66	87°81
23	33°84'	31°69'	2°403	31°82'	.22	.015	9°27	87°73
28	33°46'	31°33'	2°372	31°46'	.20	.014	8°84	87°64
June								
2	33°10'	30°99'	2°344	31°13'	0°18	0°012	8°38	87°55
7	32°77'	30°68'	2°318	30°83'	.15	.010	7°88	87°44
12	32°47'	30°40'	2°292	30°55'	.13	.009	7°34	87°33

The angle $\lambda - L$ is the difference of the Jovicentric longitudes of the Sun and the Earth, reckoned in the plane of *Jupiter's* equator, $O - L$ the difference of longitudes of *Jupiter's* vernal equinoctial point O and of the point of his equator which is in opposition to the Earth, or $L + 180^\circ - O$ is the Jovicentric longitude of the Earth reckoned from O .

The assumed daily rate of rotation, on which the "Longitude of λ 's Central Meridian" depends, is the same as has been adopted in the ephemerides of the last two apparitions—namely, $870^\circ \cdot 42$, the corresponding period being $9^h 55^m 34^s \cdot 47$. Even if it should be found that, since last seen, the great reddish spot has entirely faded away, its place ought to be watched specially, and for the purpose it seems desirable not to make any alteration for the present. In the column "Longitude of λ 's Central Meridian" the successive values differ, for an interval of five days, by twelve rotations and some thirty degrees, so that, for instance, the first difference is $4351^\circ \cdot 59$ and the last $4350^\circ \cdot 89$, which must be borne in mind in interpolating. If the "Corr. for Phase" is added to the "Longitude of λ 's Central Meridian," or of the meridian directed to the Earth, the longitude of the meridian is found which bisects the illuminated disk of the planet.

The assumed value of *Jupiter's* equatorial diameter is $37' \cdot 60$ at the distance $5 \cdot 20273$. The assumed proportion of the polar axis to the equatorial diameter is $0 \cdot 9363$. The defect of illumination of the apparent polar diameter is insensible, that of the difference of limbs in declination is $0'' \cdot 02$ from October 6 to November 30 and $0'' \cdot 01$ for the other dates, except from December 25 to February 13, when it is insensible. The last columns give the values of the auxiliary angles d and w required in the computations for defect of illumination, as explained in vol. xl. p. 490 ff.

The following is a list of the Greenwich mean times, when the assumed First Meridian of *Jupiter* passes the middle of the illuminated disk:—

1883.	h m	1883.	h m	1883.	h m	1883.	h m
Sept. 15	18 53.8	Sept. 20	18 1.5	Sept. 25	17 9.1	Sept. 30	16 16.5
16 4 49.4		21 3 57.1		26 3 47		Oct. 1	2 12.2
14 45.1		13 52.8		13 0.3		12	7.8
17 0 40.7		23 48.4		22 55.9		22	3.4
10 36.4		22 9 44.0		27 8 51.6		2	7 59.0
20 32.0		19 39.7		18 47.2		17	54.6
18 6 27.7		23 5 35.3		28 4 42.8		3	3 50.3
16 23.3		15 30.9		14 38.4		13	45.9
19 2 18.9		24 1 26.5		29 0 34.1		23	41.5
12 14.6		11 22.2		10 29.7		4	9 37.1
22 10.2		21 17.8		20 25.3		19	32.7
20 8 5.9		25 7 13.4		30 6 20.9		5	5 28.3

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1883.	h m	1883.	h m	1883.	h m	1883.	h m
Oct. 5	15 23.9	Oct. 22	4 27.8	Nov. 7	17 30.5	Nov. 24	6 32.1
6	1 19.5		14 23.4	8	3 26.1		16 27.7
11	15.2	23	0 19.0	13	21.7	25	2 23.2
21	10.8	10	14.6	23	17.2	12	18.7
7	7 6.4	20	10.2	9	9 12.6	22	14.2
	17 2.0	24	6 5.7	19	8.3	26	8 9.8
8	2 57.6	16	1.3	10	5 3.9	18	5.3
12	53.2	25	1 56.9	14	59.4	27	4 0.8
22	48.8	11	52.5	11	0 55.0	13	56.3
9	8 44.4	21	48.0	10	50.5	23	51.8
18	40.0	26	7 43.6	20	46.1	28	9 47.4
10	4 35.6	17	39.2	12	6 41.6	19	42.9
14	31.2	27	3 34.8	16	37.2	29	5 38.4
11	0 26.8	13	30.3	13	2 32.7	15	33.9
10	22.4		23 25.9	12	28.2	30	1 29.4
20	18.0	28	9 21.5	22	23.8	11	24.9
12	6 13.6	19	17.1	14	8 19.3	21	20.4
16	9.2	29	5 12.6	18	14.9	Dec. 1	7 16.0
13	2 4.8	15	8.2	15	4 10.4		17 11.5
12	0.4	30	1 3.8	14	6.0	2	3 7.0
21	56.0	10	59.3	16	0 1.5	13	2.5
14	7 51.6	20	54.9	9	57.0	22	58.0
17	47.2	31	6 50.5	19	52.6	3	8 53.5
15	3 42.8	16	46.0	17	5 48.1	18	49.0
13	38.4	Nov. 1	2 41.6	15	43.6	4	4 44.5
23	34.0		12 37.2	18	1 39.2	14	40.0
16	9 29.6		22 32.7	11	34.7	5	0 35.5
19	25.2	2	8 28.3	21	30.2	10	31.0
17	5 20.8	18	23.9	19	7 25.8	20	26.6
15	16.4	3	4 19.4	17	21.3	6	6 22.1
18	1 11.9	14	15.0	20	3 16.8	16	17.6
11	7.5	4	0 10.5	13	12.4	7	2 13.1
21	3.1	10	6.1	23	7.9	12	8.6
19	6 58.7	20	1.7	21	9 3.4	22	4.1
16	54.3	5	5 57.2	18	59.0	8	7 59.6
20	2 49.9	15	52.8	22	4 54.5	17	55.1
12	45.5	6	1 48.3	14	50.0	9	3 50.6
22	41.1	11	43.9	23	0 45.6	13	46.1
21	8 36.7	21	39.4	10	41.1	23	41.6
18	32.2	7	7 35.0	20	36.6	10	9 37.1

1883.	h m	1883.	h m	1884.	h m	1884.	h m
Dec. 10 19 32.6		Dec. 27	8 32.2	Jan. 12 11	35.9	Jan. 29	0 35.4
11 5 28.1			18 27.7		21 31.4		10 30.9
15 23.6		28	4 23.2	13	7 26.9		20 26.4
12 1 19.1			14 18.6		17 22.3	30	6 21.9
11 14.6		29	0 14.1	14	3 17.8		16 17.4
21 10.1			10 9.6	13	13.3	31	2 12.9
13 7 5.6		20	5.1		23 8.8		12 8.4
17 1.1		30	6 0.6	15	9 4.3		22 3.9
14 2 56.6			15 56.0		18 59.7	Feb.	1 7 59.4
12 52.1		31	1 51.5	16	4 55.2		17 54.9
22 47.6			11 47.0		14 50.7		2 3 50.4
15 8 43.1			21 42.5	17	0 46.2		13 45.9
18 38.5	1884.			10	41.7		23 41.4
16 4 34.0	Jan.	1	7 38.0		20 37.1		3 9 36.9
14 29.5			17 33.4	18	6 32.6		19 32.4
17 0 25.0		2	3 28.9		16 28.1		4 5 28.0
10 20.5			13 24.4	19	2 23.6		15 23.5
20 16.0			23 19.9		12 19.1		5 1 19.0
18 6 11.5		3	9 15.4		22 14.6		11 14.5
16 7.0			19 10.8	20	8 10.0		21 10.0
19 2 2.5		4	5 6.3		18 5.5		6 7 5.5
12 58.0			15 1.8	21	4 1.0		17 1.1
21 53.5		5	0 57.3		13 56.5		7 2 56.6
20 7 49.0			10 52.8		23 52.0		12 52.1
17 44.4			20 48.2	22	9 47.5		22 47.6
21 3 39.9		6	6 43.7		19 43.0		8 8 13.1
13 35.4			16 39.2	23	5 38.4		18 38.7
23 30.9		7	2 34.7		15 33.9		9 4 34.2
22 9 26.4			12 30.2	24	1 29.4		14 29.7
19 21.9			22 25.6		11 24.9		10 0 25.2
23 5 17.4		8	8 21.1		21 20.4		10 20.8
15 12.8			18 16.6	25	7 15.9		20 16.3
24 1 8.3		9	4 12.1		17 11.4		11 6 11.8
11 3.8			14 7.5	26	3 6.9		16 7.3
20 59.3		10	0 3.0		13 2.4		12 2 2.9
25 6 54.8			9 58.5		22 57.9		11 58.4
16 50.3			19 54.0	27	8 53.4		21 53.9
26 2 45.7		11	5 49.5		18 48.9		13 7 49.5
12 41.2			15 44.9	28	4 44.4		17 45.0
22 36.7		12	1 40.4		14 39.9		14 3 40.5

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Observations of Jupiter.

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1884.	h m	1884.	h m	1884.	h m	1884.	h m
Feb. 14	13 36.1	Mar. 2	2 38.5	Mar. 18	15 42.7	Apr. 4	4 48.6
23	31.6		12 34.1	19	1 38.3	14	44.2
15	9 27.2		22 29.7		11 34.0	5	0 39.9
19	22.7		3 8 25.3		21 29.4	10	35.6
16	5 18.2		18 20.8		20 7 25.2	20	31.2
15	13.8		4 4 16.4		17 20.9	6	6 26.9
17	1 9.3		14 12.0		21 3 16.5	16	22.6
11	4.9		5 0 7.6		13 12.1	7	2 18.2
21	0.4		10 3.2		23 7.8	12	13.9
18	6 56.0		19 58.8		22 9 3.4	22	9.6
16	51.5		6 5 54.4		18 59.0	8	8 5.2
19	2 47.1		15 50.0		23 4 54.7	18	0.9
12	42.6		7 1 45.6		14 50.3	9	3 56.6
22	38.2		11 41.2		24 0 45.9	13	52.3
20	8 33.7		21 36.8		10 41.6	23	47.9
18	29.3		8 7 32.4		20 37.2	10	9 43.6
21	4 24.8		17 28.0		25 6 32.9	19	39.3
14	20.4		9 3 23.6		16 28.5	11	5 35.0
22	0 16.0		13 19.2		26 2 24.2	15	30.6
10	11.5		23 14.8		12 19.8	12	1 26.3
20	7.1		10 9 10.4		22 15.4	11	22.0
23	6 2.6		19 6.0		27 8 11.1	21	17.7
15	58.2		11 5 1.6		18 6.7	13	7 13.4
24	1 53.8		14 57.2		28 4 2.4	17	9.0
11	49.3		12 0 52.8		13 58.0	14	3 4.7
21	44.9		10 48.4		23 53.7	13	0.4
25	7 40.4		20 44.1		29 9 49.3	22	56.1
17	36.0		13 6 39.7		19 45.0	15	8 51.8
26	3 31.6		16 35.3		30 5 40.6	18	47.4
13	27.2		14 2 30.9		15 36.3	16	4 43.1
23	22.7		12 26.5		31 1 32.0	14	38.8
27	9 18.3		22 22.1		11 27.6	17	0 34.5
19	13.9		15 8 17.7		21 23.3	10	30.2
28	5 9.5		18 13.4	Apr. 1	7 18.9	20	25.9
15	5.0		16 4 9.0		17 14.6	18	6 21.6
29	1 0.6		14 4.6		2 3 10.3	16	17.3
10	56.2		17 0 0.2		13 5.9	19	2 12.9
20	51.8		9 55.8		23 1.6	12	8.6
Mar. 1	6 47.3		19 51.5		3 8 57.2	22	4.3
16	42.9		18 5 47.1		18 52.9	20	8 0.0

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Mr. Marth, Ephemeris for Jupiter.

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1884.	h m	1884.	h m	1884.	h m	1884.	h m
Apr. 20	17 55.7	May 3	23 38.2	May 17	5 21.1	May 30	11 4.4
21	3 51.4	4	9 33.9	15	16.8	21	0.1
13	47.1	19	29.6	18	1 12.5	31	6 55.9
23	42.8	5	5 25.3	11	8.3	16	51.6
22	9 38.5	15	21.0	21	4.0	June 1	2 47.3
19	34.2	6	1 16.7	19	6 59.7	12	43.1
23	5 29.9	11	12.4	16	55.4	22	38.8
15	25.6	21	8.1	20	2 51.2	2	8 34.5
24	1 21.3	7	7 3.9	12	46.9	18	30.3
11	17.0	16	59.6	22	42.6	3	4 26.0
21	12.7	8	2 55.3	21	8 38.4	14	21.7
25	7 8.4	12	51.0	18	34.1	4	0 17.5
17	4.1	22	46.7	22	4 29.8	10	13.2
26	2 59.8	9	8 42.4	14	25.5	20	8.9
12	55.5	18	38.1	23	0 21.3	5	6 4.7
22	51.2	10	4 33.9	10	17.0	16	0.4
27	8 46.9	14	29.6	20	12.7	6	1 56.1
18	42.6	11	0 25.3	24	6 8.4	11	51.9
28	4 38.3	10	21.0	16	4.2	21	47.6
14	34.0	20	16.7	25	1 59.9	7	7 43.3
29	0 29.7	12	6 12.5	11	55.6	17	39.1
10	25.4	16	8.2	21	51.4	8	3 34.8
20	21.1	13	2 3.9	26	7 47.1	13	30.5
30	6 16.8	11	59.6	17	42.8	23	26.3
16	12.5	21	55.3	27	3 38.5	9	9 22.0
May 1	2 8.2	14	7 51.0	13	34.3	19	17.7
12	3.9	17	46.8	23	30.0	10	5 13.5
21	59.6	15	3 42.5	28	9 25.7	15	9.2
2	7 55.3	13	38.2	19	21.5	11	1 4.9
17	51.0	23	33.9	29	5 17.2	11	0.7
3	3 46.7	16	9 29.6	15	12.9	20	56.4
13	42.5	19	25.4	30	1 8.7	12	6 52.1

According to observations made last April by Mr. Denning, the centre of the very much faded reddish spot followed the First Meridian of the Ephemeris about $1^h 34^m$. In case the slackening of the motion has continued, the spot or its place will be near the centre of the disk, when observations become again feasible, about two hours after the times in the foregoing list.

June 1883. Mr. Marth, *Satellites of Saturn.*

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Ephemerides of the Satellites of Saturn, 1883-84.
By A. Marth.

The following ephemerides of the five inner satellites are founded upon the same elements as those for the preceding apparition, which were published in the last volume of the *Monthly Notices*. The five satellites deviate so little from the plane of the ring, that it will be most suitable to treat their deviations as latitudes above this plane, the ascending node N and inclination J of which in reference to the plane of the Earth's equator being here assumed :—

1883, Aug. 27	N = 126°48'33	J = 7°01'19
Sept. 26	4852	9110.
Oct. 26	4880	5110.
Nov. 25	4921	3110.
Dec. 25	4965	0110.
1884, Jan. 24	5007	0105
Feb. 23	5015	1010.
Mar. 24	126°50'32	7°00'99

the longitudes N being reckoned from the point of the true equinox.

The assumed longitudes of the satellites in their orbits (i.e. their longitudes from the ascending node added to the right ascension N of the ascending node), referring to the time when the light arrives at the distance, the logarithm of which is 0.950, are the following :—

ob Gr.	Mimas.	Enceladus.	Tethys.	Dione.	Rhea.
1883, Aug. 27	129°657	185°881	202°304	82°635	269°080
Sept. 26	69°389	147°838	163°249	68°687	139°785
Oct. 26	9°122	109°795	124°194	54°739	10°490
Nov. 25	308°856	71°752	85°138	40°791	241°194
Dec. 25	248°590	33°708	46°083	26°843	111°899
1884, Jan. 24	188°326	355°665	7°027	12°894	342°603
Feb. 23	128°063	317°622	327°972	358°946	213°308
Mar. 24	67°801	279°579	288°917	344°998	84°013

In the following tables P denotes the position-angle of the minor axis of the ring, L + 180° the planetocentric longitude of the Earth referred to the plane of the ring; $\Delta + 180^\circ$ that of the Sun, or $\Delta - L$ the difference between the two. The apparent equatorial diameter of the ball and the diameter of the outer rim of the ring depend on Bessel's determinations. The assumed proportion of the polar axis of the ball to the equatorial diameter is 0.900.